FIG. 1

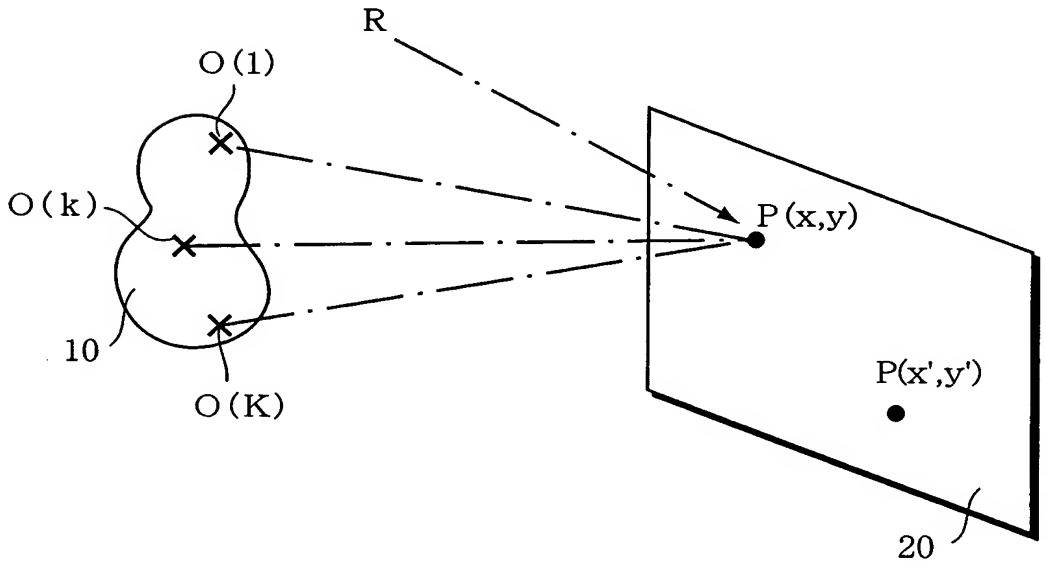

R
O(1)
O(k)
10
O(K)
P(x,y)
P(x',y')
20

FIG. 2

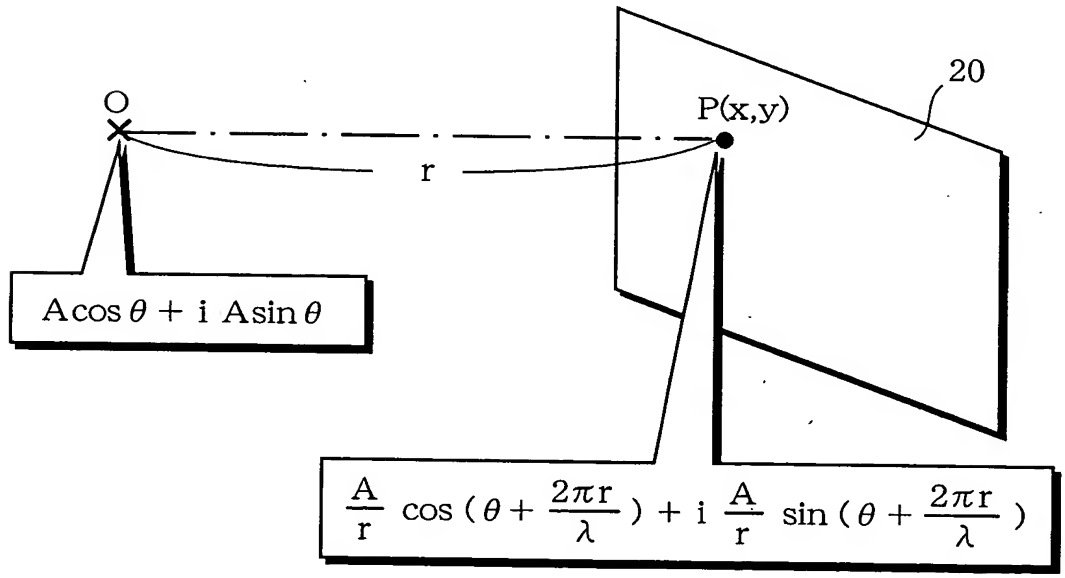

O
r
P(x,y)
20
Acos θ + i Asin θ
A/r cos(θ + 2πr/λ) + i A/r sin(θ + 2πr/λ)

FIG. 3

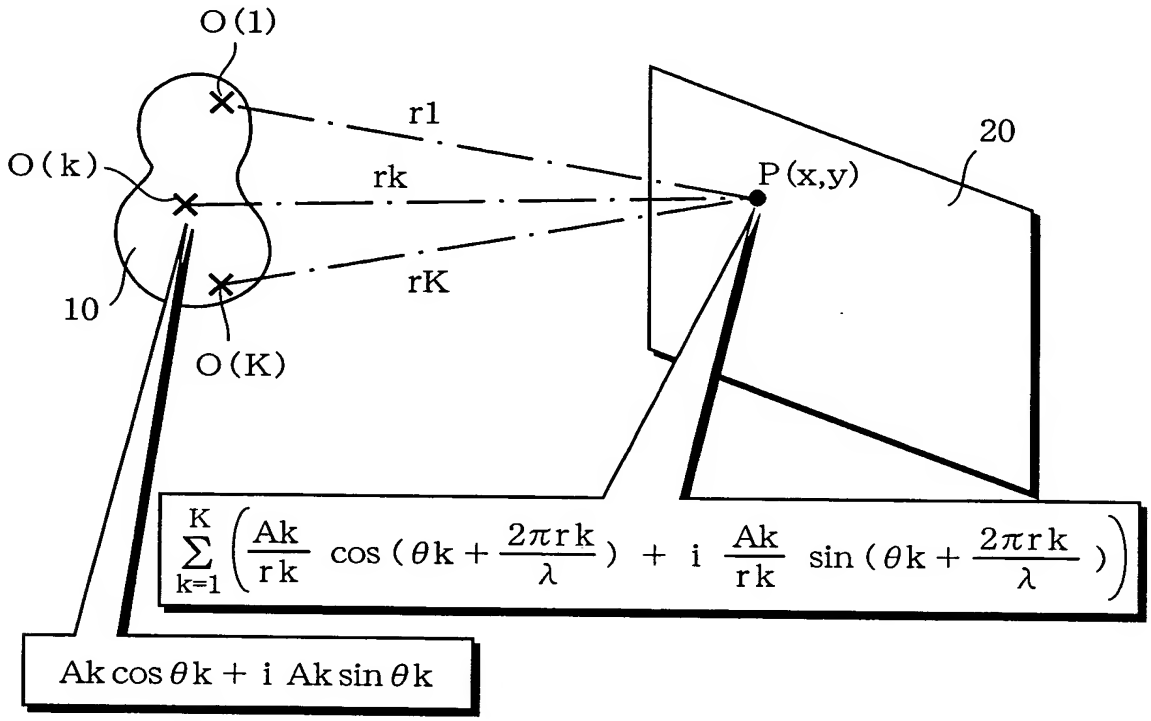

O(1)
O(k)
O(K)
10
r1
rk
rK
P(x,y)
20
$\sum_{k=1}^{K}\left(\frac{Ak}{rk}\cos(\theta k+\frac{2\pi rk}{\lambda})+i\frac{Ak}{rk}\sin(\theta k+\frac{2\pi rk}{\lambda})\right)$
$Ak\cos\theta k+i\,Ak\sin\theta k$

FIG. 4

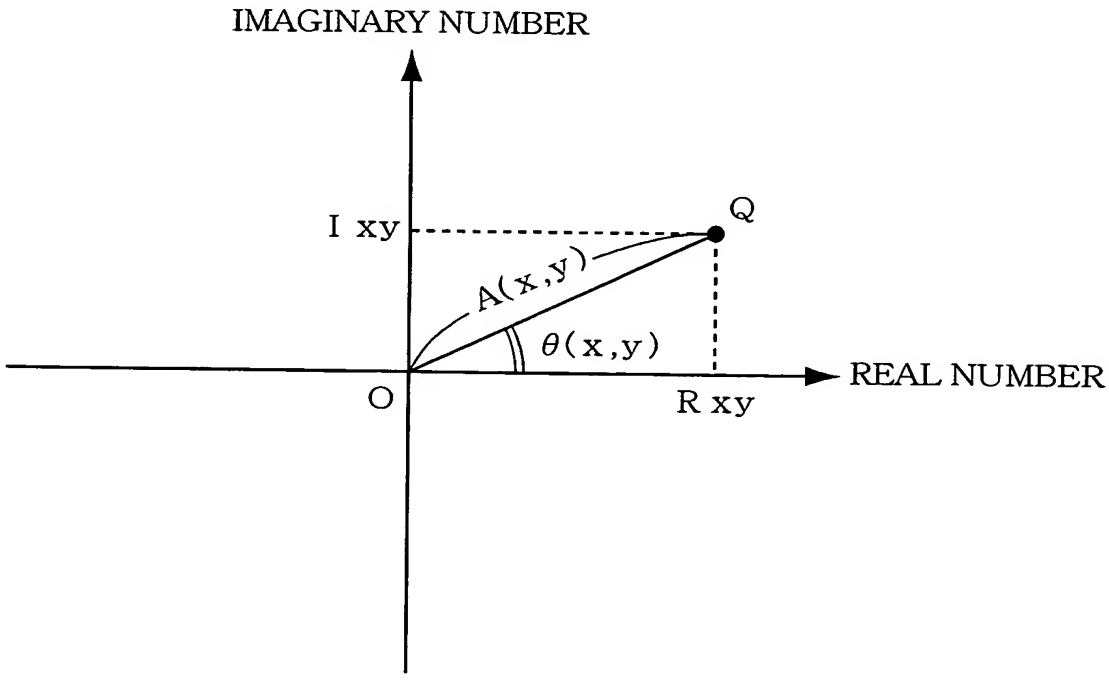

IMAGINARY NUMBER
I xy
Q
A(x,y)
θ(x,y)
O
R xy
REAL NUMBER

FIG. 5

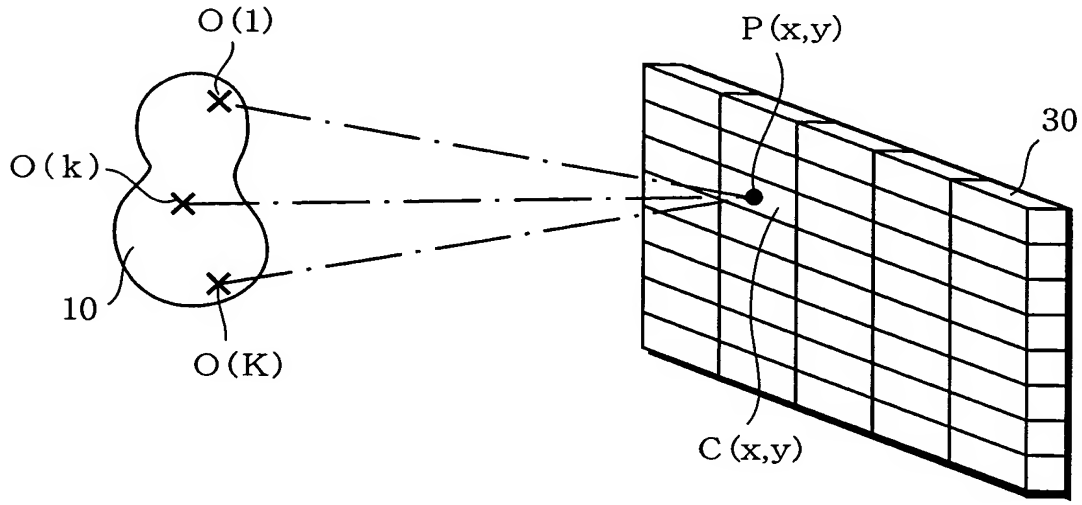
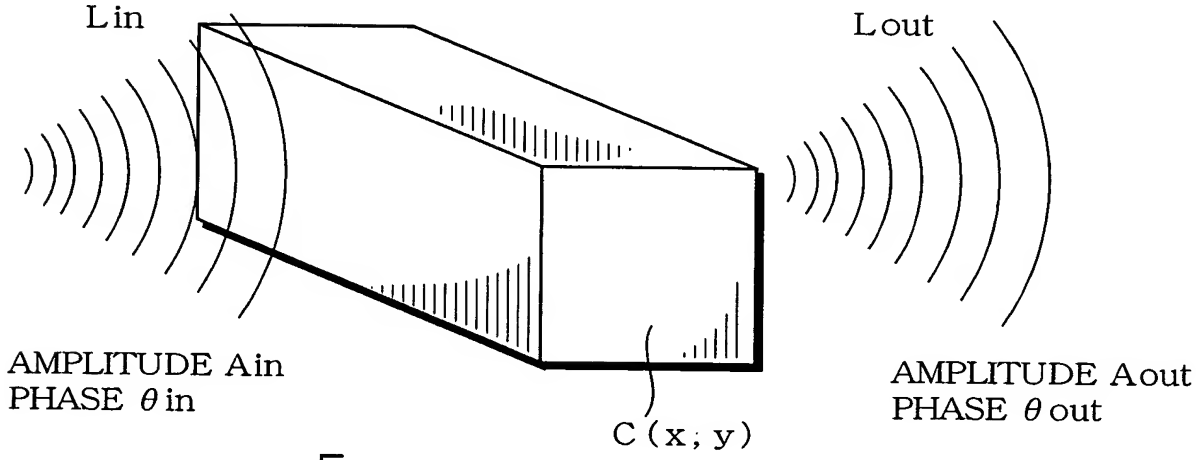


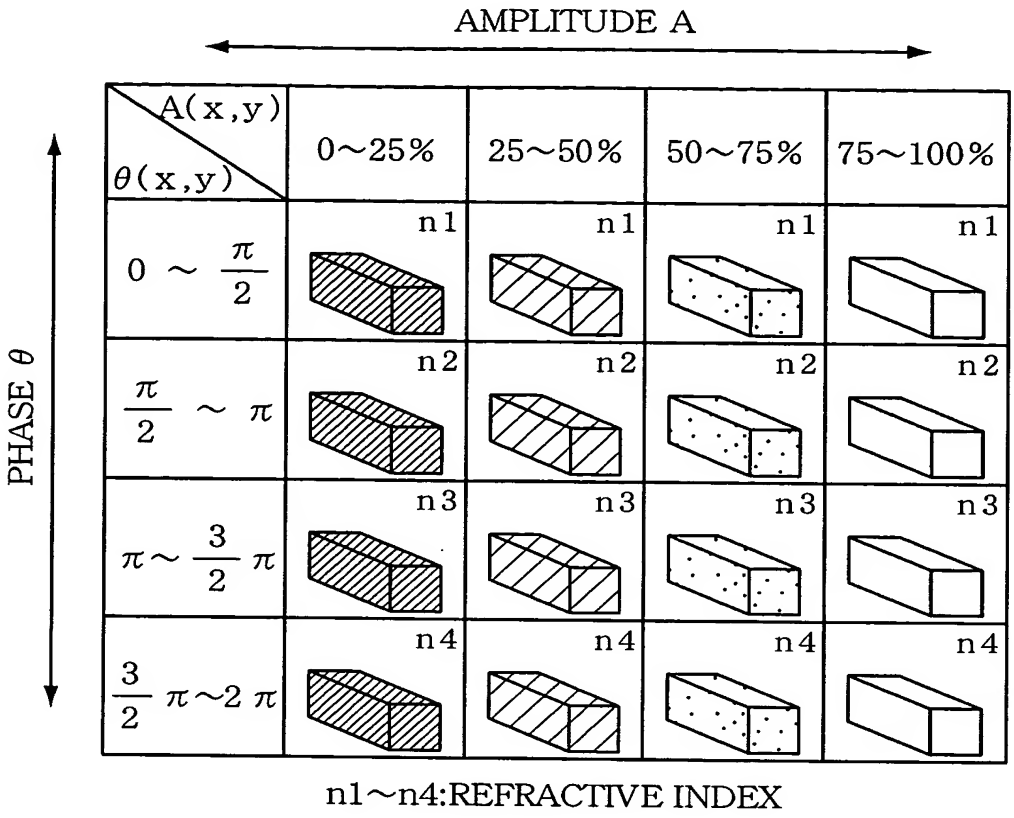
FIG. 6



[RECORDED AMPLITUDE : A(x, y)
RECORDED PHASE : θ(x, y)]

$Aout = Ain \cdot A(x,y)$
$\theta out = \theta in \pm \theta(x,y)$

FIG. 7



n1~n4:REFRACTIVE INDEX

FIG. 8

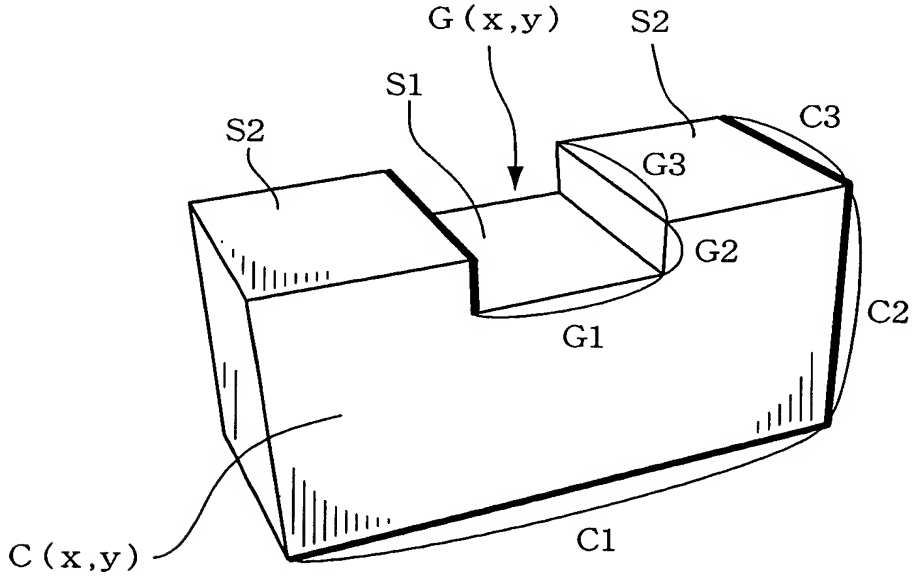


FIG. 9

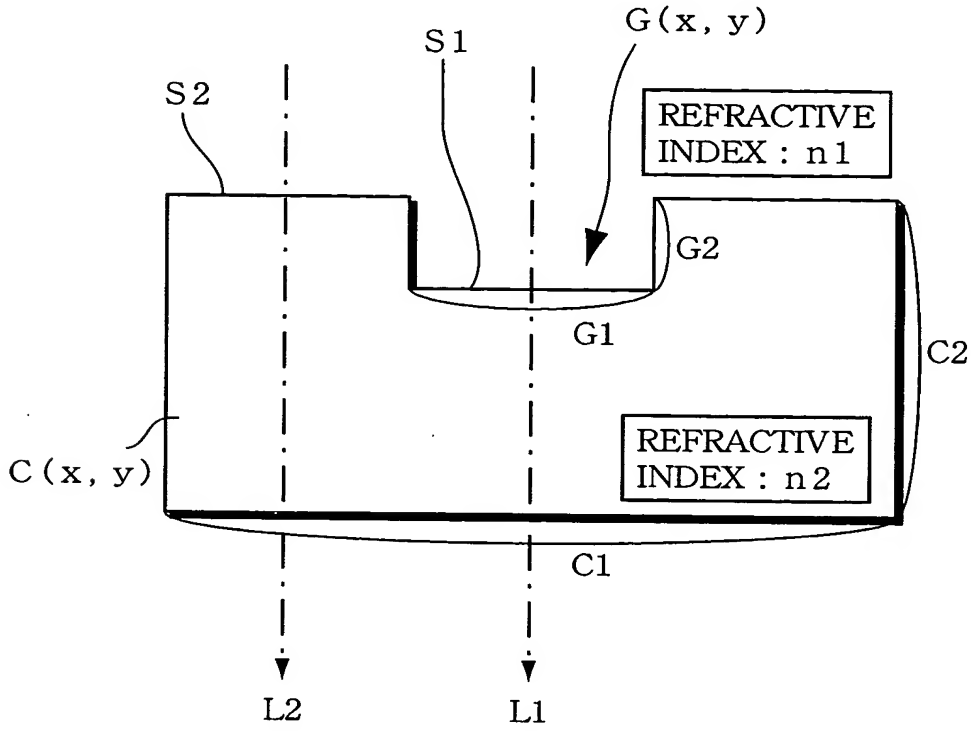

G(x, y)
S1
S2
REFRACTIVE INDEX : n1
G2
G1
C2
C(x, y)
REFRACTIVE INDEX : n2
C1
L2
L1

FIG. 1 0

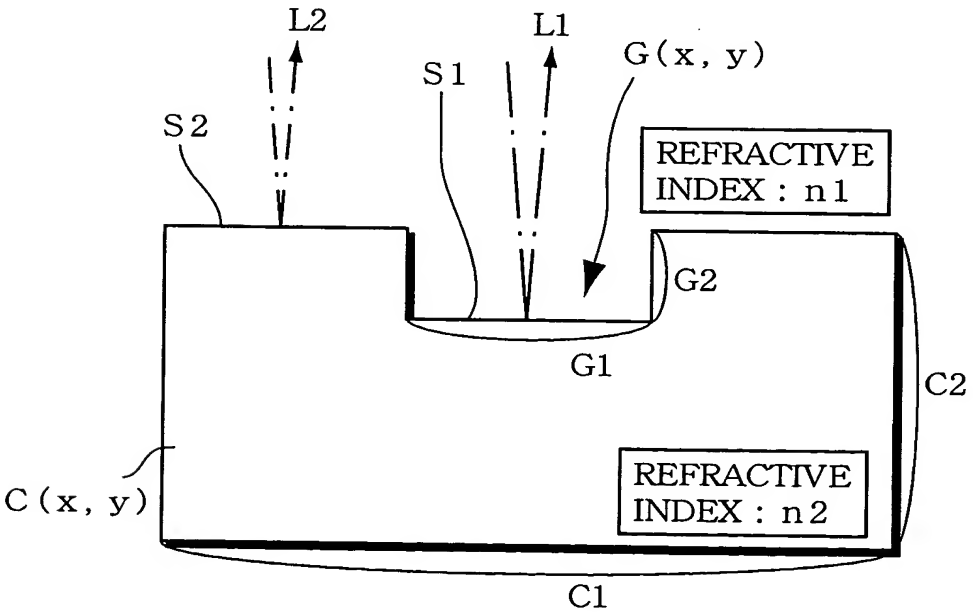

L2
L1
G(x, y)
S1
S2
REFRACTIVE INDEX : n1
G2
G1
C2
C(x, y)
REFRACTIVE INDEX : n2
C1

FIG. 1 1

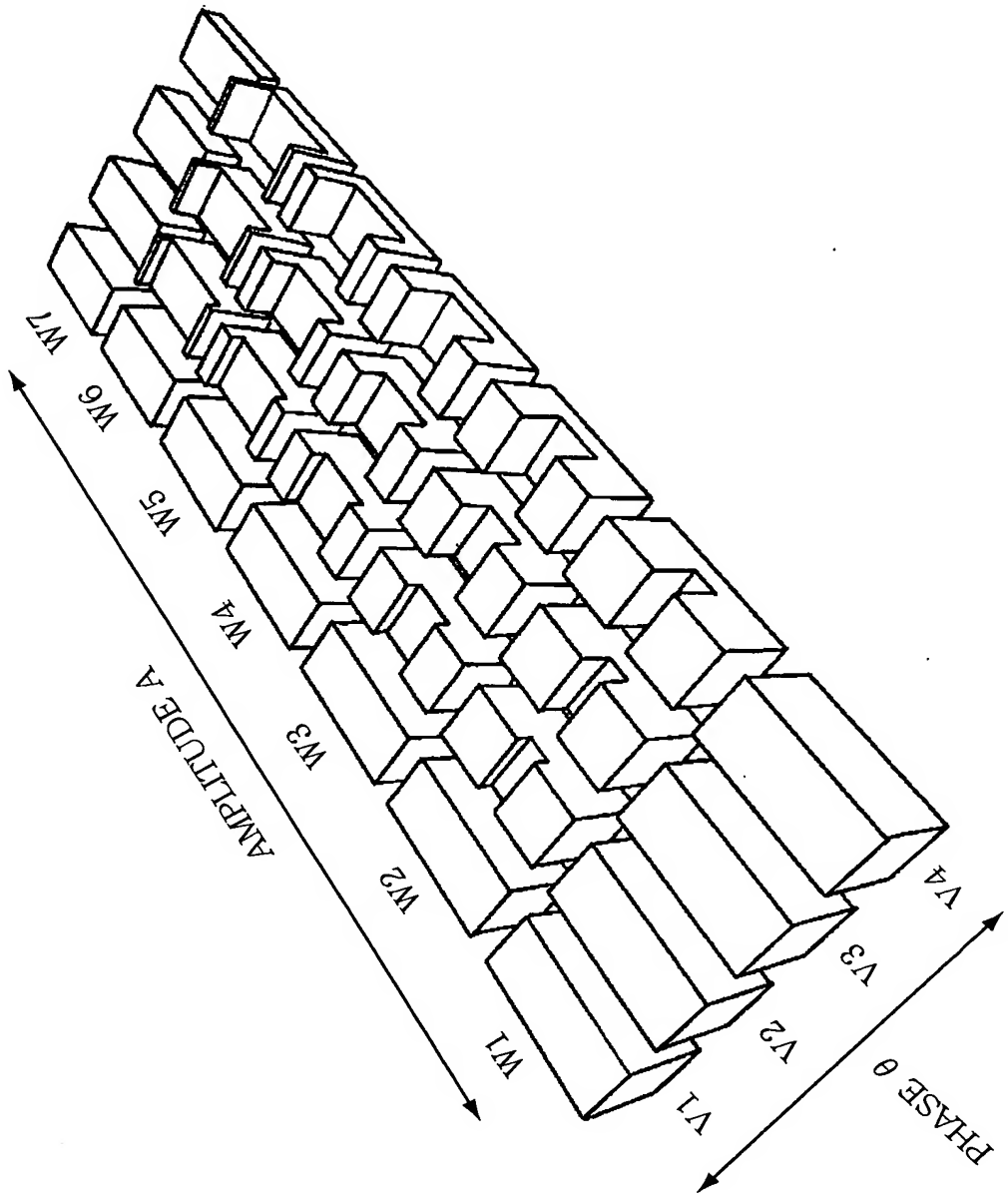
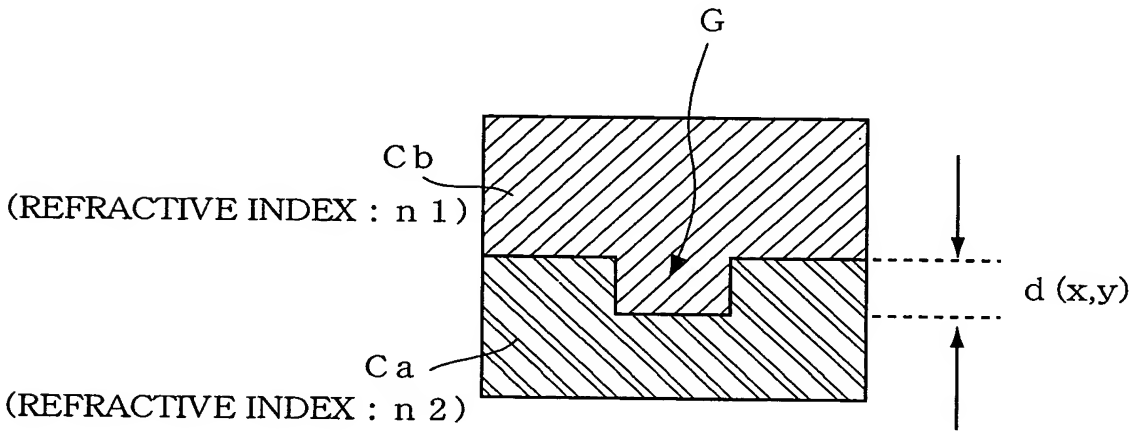


FIG. 1 2

TRANSMISSION TYPE CELL : C (x,y)



◎MAXIMUM DEPTH OF GROOVE G : $d\max = \frac{\lambda}{|n1 - n2|}$

◎DEPTH OF GROOVE G FOR A SPECIFIC CELL C(x,y) :

(1) IF $n1 > n2$

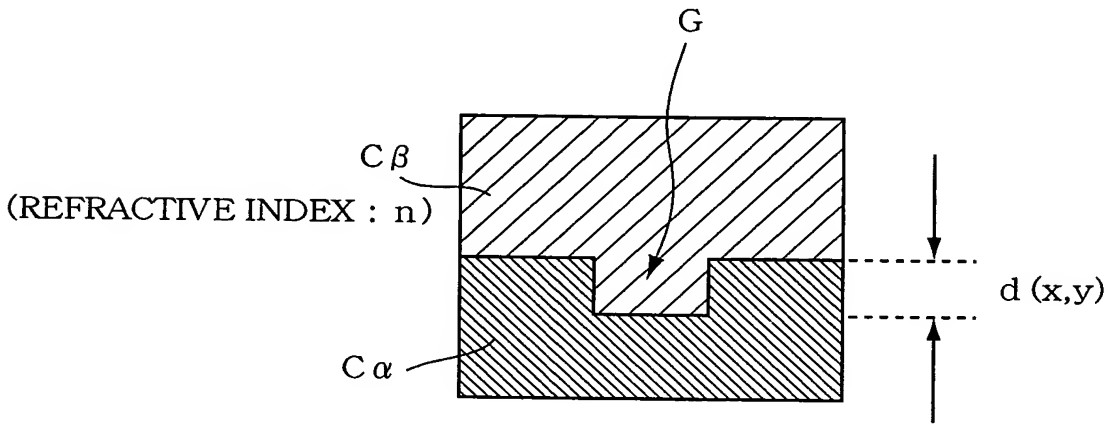
$$d(x,y) = \frac{\lambda \cdot \theta(x,y)}{2(n1 - n2)\pi}$$

(2) IF $n1 < n2$

$$d(x,y) = d\max - \frac{\lambda \cdot \theta(x,y)}{2(n2 - n1)\pi}$$

FIG. 1 3

REFLECTION TYPE CELL : C (x,y)



◎MAXIMUM DEPTH OF GROOVE G : $d\,max = \frac{\lambda}{2n}$

◎DEPTH OF GROOVE G FOR A SPECIFIC CELL C(x,y) :

$$d\,(x,y) = \frac{\lambda \cdot \theta\,(x,y)}{4n\pi}$$

ESPECIALLY, WHEN PROTECTIVE LAYER Cβ IS REPLACED BY AIR LAYER, APPROXIMATION $n = 1$ IS MADE.

◎MAXIMUM DEPTH OF GROOVE G : $d\,max = \frac{\lambda}{2}$

◎DEPTH OF GROOVE G FOR A SPECIFIC CELL C(x,y) :

$$d\,(x,y) = \frac{\lambda \cdot \theta\,(x,y)}{4\pi}$$

FIG. 1 4

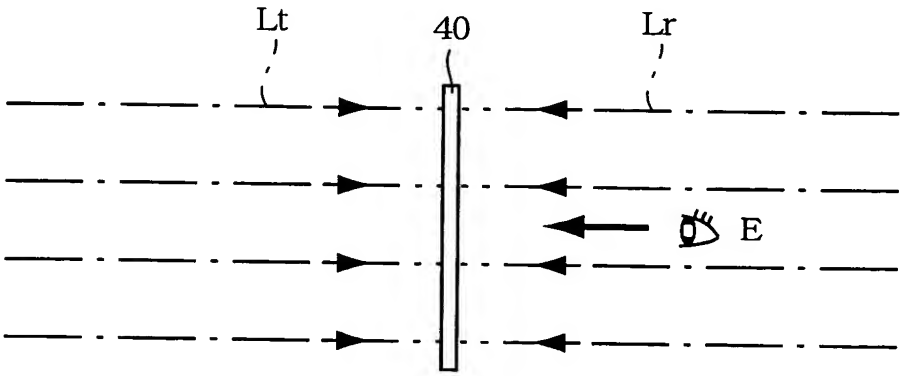


FIG. 1 5

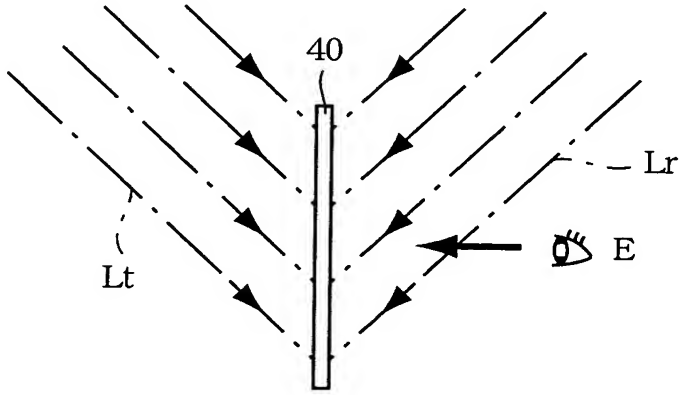


FIG. 1 6

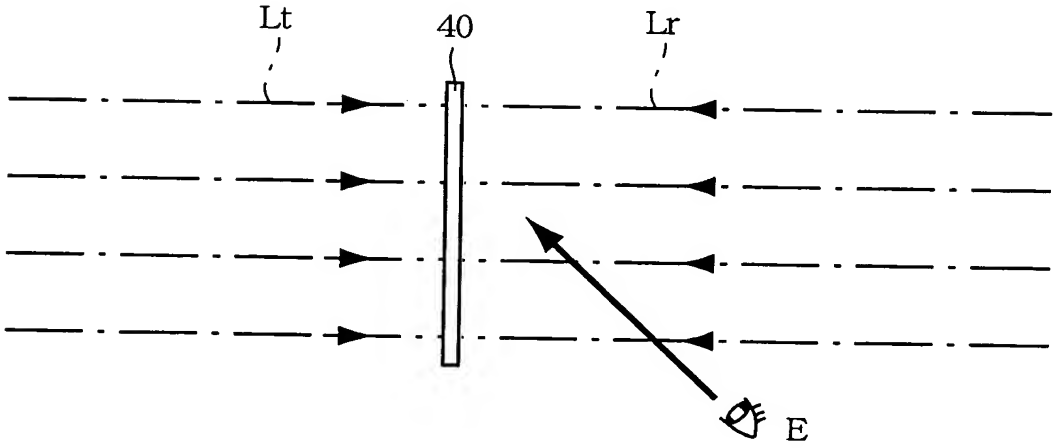


FIG. 17

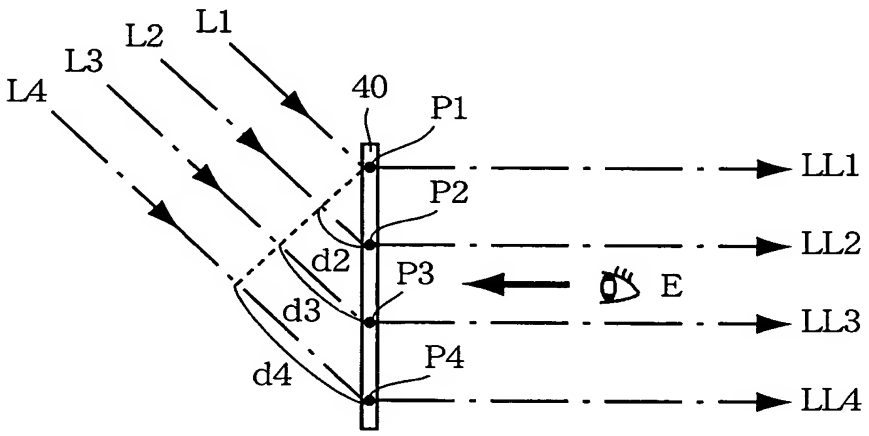

L1
L2
L3
L4
40
P1
P2
P3
P4
d2
d3
d4
E
LL1
LL2
LL3
LL4

FIG. 18

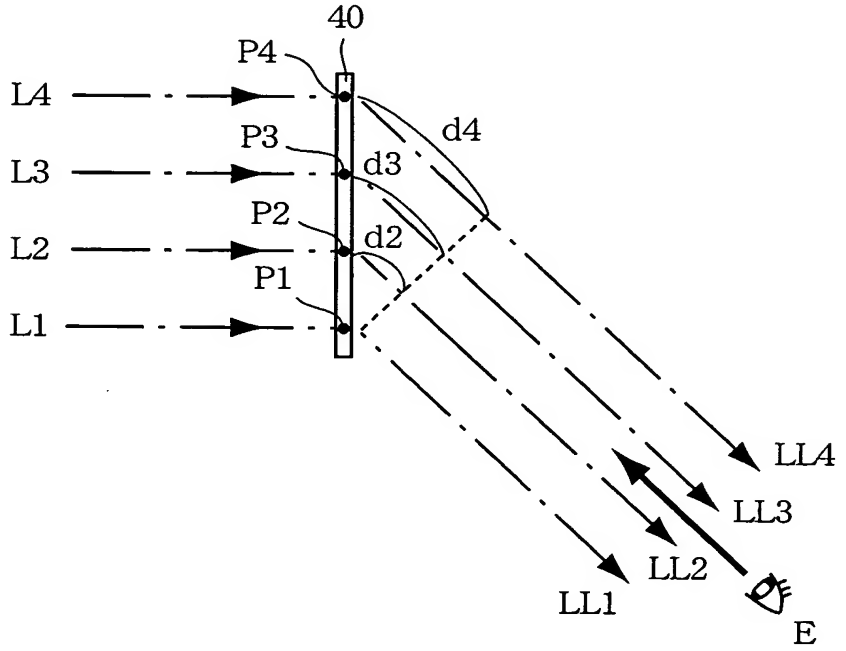
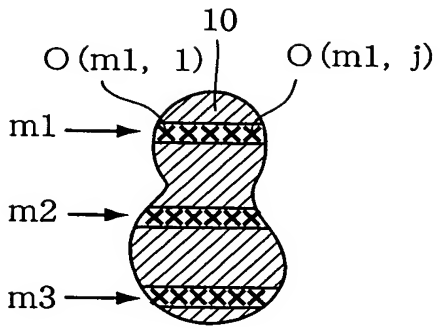

40
P4
P3
P2
P1
L4
L3
L2
L1
d4
d3
d2
LL4
LL3
LL2
LL1
E

FIG. 1 9



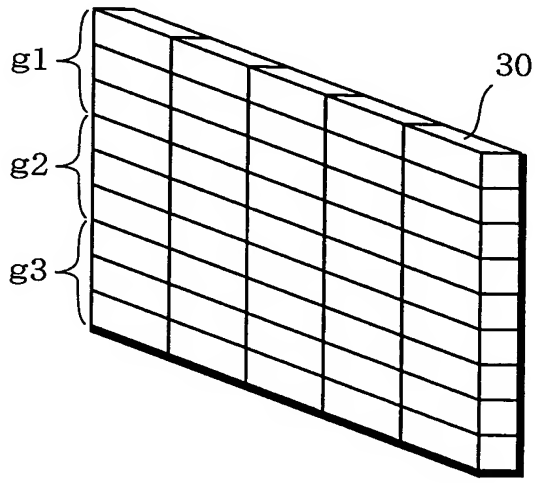


FIG. 2 0